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THE GENUS OF TEIID LIZARDS, *VERTICARIA* COPE, 1869, CONSIDERED AS A SYNONYM OF *CNEMIDOPHORUS* WAGLER, 1830, WITH A KEY TO THE PRIMITIVE GENERA OF THE TEIIDAE.¹

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The genus *Verticaria* has been separated from *Cnemidophorus* on the basis of only one character, namely, the frontoparietal or postfrontal plate. In *Cnemidophorus* this shield is characteristically divided into two or more plates, while in *Verticaria* it is supposedly single. The union of two head plates, such as the frontoparietals in this case, may usually be regarded as a poor generic distinction if used alone. Even though that character be fairly constant in a small series, a detailed examination of a large number of individuals, especially if they represent wide-ranging species, is fairly certain to bring to light numerous intermediates in both the primitive and derived stocks. Thus, the frontoparietals of *Cnemidophorus tessellatus tessellatus* are rather frequently partly united into one scute (Mus. Vert. Zool. Univ. Calif. Nos. 3195 and 3216) and sometimes they are entirely united or nearly so (Calif. Acad. Sci. Nos. 43223 and 42459). This line of variation in *Cnemidophorus tessellatus tessellatus* tends toward the production of a *Verticaria*, such as has recently been found by Van Denburgh and Slevin (1921) in *Verticaria ceralbensis* from Ceralbo Island, Gulf of California, Mexico. So obvious is this relationship that the writer upon considering its degree of morphological specialization believes *Verticaria ceralbensis* to be directly derived from *Cnemidophorus tessellatus tessellatus*. The frontoparietals of the much smaller *Verticaria hyperythra*

¹Contribution from the Zoological Laboratory of the University of Michigan.

stock may occasionally be divided into two parts. A number of such variants have been recorded during this study for *Verticaria hyperythra hyperythra* (Calif. Acad. Sci. Nos. 53555, 53569, and 57539; U. S. N. M. No. 12613; and M. C. Z. No. 569), but none have been found in *Verticaria caerulea* or *V. picta*. In addition, *Cnemidophorus deppei deppei* of Mexico has varied in the opposite direction by producing individuals with one frontoparietal only partly divided (Amer. Mus. Nos. 18959, 18924, 19188, and 19186) or with the two usually separate elements completely united (Calif. Acad. Sci. Field No. 6045 from Mixtequillo, Oaxaca, Mexico). It is significant that the *Verticaria hyperythra* group is related to the *deppei* and *perplexus* stocks of *Cnemidophorus* and not to the *tessellatus* group as is *Verticaria ceralbensis*. Because of these divided relationships within the supposed genus *Verticaria*, in addition to the inconstancy of the only distinguishing character, it is necessary to consider *Verticaria* a synonym of *Cnemidophorus*.

The placing of *Verticaria sericea* Van Denburgh (1895) in the genus *Cnemidophorus* makes necessary the formulation of a new name, since it is now preoccupied by *Cnemidophorus gularis sericeus* Cope (1892). The writer recognizes the lizard hitherto known as *Verticaria sericea* as a subspecies closely allied to *Cnemidophorus hyperythrus hyperythrus*, and therefore proposes that the form be henceforth designated as—

***Cnemidophorus hyperythrus danheimae*,¹ new name.**

In order to make clear at this point the distinctions among the primitive genera of the Teiidae, with which *Cnemidophorus* is allied, the following key has been prepared. It is, essentially, a rearrangement of the one presented by Boulenger (1885).

KEY TO THE PRIMITIVE GENERA OF THE TEIIDAE.

- | | |
|---|---|
| 1. Ventral plates in more than 20 longitudinal series..... | 2 |
| Ventral plates in 20, or less than 20, longitudinal series..... | 5 |
| 2. Tail strongly compressed, bicarinate above..... | 3 |
| Tail not strongly compressed, somewhat rounded, not bicarinate..... | 4 |
| 3. Dorsal scales small, granular, uniform in size or slightly graded..... | |
| 1. <i>Crocodylurus</i> | |
| Dorsal scales not uniform or graded; many smaller dorsal granules | |

¹This name is given to this lizard as a token of appreciation from the writer to his wife, May Danheim Burt, who has been his constant inspiration, aide, and companion during the period of his study of these Teiid lizards.

- present, these intermixed and abruptly contrasted with a number of large, keeled tubercles.....2. *Dracaena*
4. Head shields all large and comparatively few.....3. *Tupinambis*
Head shields small and numerous; prefrontals and nasals split into many smaller scutes or granules.....4. *Callopsites*
5. Ventral plates keeled6
Ventral plates smooth7
6. Femoral pores present5. *Kentropyx*
Femoral pores absent.....6. *Monoplocus*¹
7. Hind foot with five well developed toes.....8
Hind foot with only four well developed toes, the fifth remaining as a mere vestige.....7. *Teius*
8. Scaly portion of tongue bifid posteriorly and heart-shaped or arrow-headed in outline.....9
Scaly portion of tongue not split posteriorly and not heart-shaped or arrow-headed in outline.....8. *Ameiva*
9. Larynx usually close to the extreme tip of the posterior wings of the scaly portion of the tongue, often between them; intervening sheath extremely small and thin, or entirely absent.....10
Larynx usually a considerable distance back of the extreme posterior portion of the scaly part of the tongue; intervening sheath always discernible, usually well developed, never extremely reduced.....8. *Ameiva*
10. Teeth longitudinally compressed (especially posteriorly and laterally) so that they are longer than they are wide.....9. *Cnemidophorus*
Teeth transversely compressed so that they are wider than they are long. (Confined to western South America.).....10. *Dicrodon*

The following table gives the present views of the writer in regard to the synonymy of the genus.

Cnemidophorus Wagler.

Cnemidophorus Wagler, Nat. Syst. Amph., 1830, p. 154 (type, *C. murinus*).
Aspidoscelis Fitzinger, Syst. Reptilium, 1843, p. 20 (type, *C. sexlineatus*).
Verticaria Cope, Proc. Amer. Philos. Soc., 1869, p. 158 (type, *C. hyperythrus*).

In conclusion it may be stated that the writer is now preparing independent revisions of the two closely related genera, *Cnemidophorus* and *Ameiva*. An interpretation of genetic relationships, together with de-

¹Boulenger (1885) gave the citation of the original description of this genus (*Monoplocus* GUNTHER, Proc. Zool. Soc. London, 1859, p. 404) and drew all of his characters from it. He stated his belief that the supposed type of the genus in the British Museum is not that type at all but a substituted specimen of *Kentropyx pelviceps*. If this is the case, it is now impossible to determine whether the type was a male or a female. If it was a female, there is every reason to believe that the males would possess femoral pores, since in certain other genera of the Teiidae the disappearance of these organs is confined to the female sex only. If such a sexual difference is found, either a new generic split must be formulated, or *Monoplocus* must pass into the synonymy of *Kentropyx* Spix, which apparently differs merely in the possession of femoral pores in both sexes.

tails of classification and synonymy, may be expected to appear in the larger works.

The writer wishes to take this opportunity to express his appreciation to Dr. Frank N. Blanchard of the Department of Zoology of the University of Michigan for his kind criticism of this manuscript.

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